



# MISSISSIPPI STATE UNIVERSITY™

## DEPARTMENT OF ANIMAL AND DAIRY SCIENCES



## Our Mission:

Our faculty are committed to serving the citizens of this state through teaching, research and extension programs. Research and extension centers are located strategically throughout the state. Animal research facilities at the Leveck Animal Research Center, Bearden Dairy Cattle Research Center, Prairie Research Unit, Brown Loam Research Station, and the White Sands Unit give faculty opportunities to investigate the challenges facing the livestock industry.

Our Mission is to provide science-based solutions for animal agriculture through innovative and effective education, research and extension programming. Our Vision is Building the Future of Agriculture.

## IN THIS ISSUE:

Congratulations to our  
Outstanding Students

Spring 2019 Undergraduate  
Research Symposium

Pancakes & Ponies

Small Ruminant Production  
Workshop and Agenda

Show Lamb Sale

2019 Dairy Cow Camp

2018-2019 School Year Has  
Been One For The Books!!

Congrats, Class of 2019

Upcoming Extension Events

2019 Refereed Publications



Mauricio Xavier and Courtney Heaton



Dr. Jamie Larson and Kate Parsons

## Congratulations to the 2019 Outstanding Students!

Courtney Heaton received the Outstanding Doctoral Student Award. She is an Equine Student under the direction of Dr. Clay Cavinder.

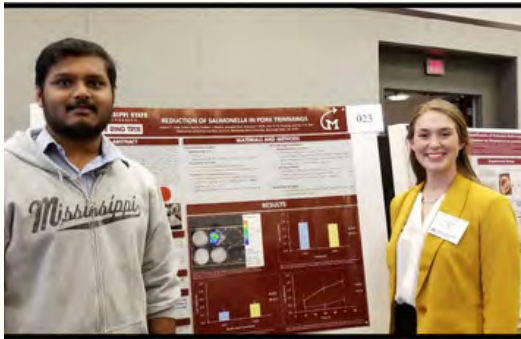
Maurício Xavier da Silva Oliveria received the Outstanding Master's Student Award. He is studying Dairy Science with Dr. Amanda Stone.

Kate Parsons was selected to receive the Outstanding Senior Award.



## Spring 2019 Undergraduate Research Symposium

The Department of Animal and Dairy Sciences was well represented at the Spring 2019 Undergraduate Research Symposium Tuesday, April 16th. Great work to all the undergraduates, graduate students, and mentors for participating in these research endeavors! Faculty mentors included Drs. Burnett, Cavinder, Dinh, Feugang, Larson, Lemley, Memili, Paz, and Stone. Undergraduate students included students in the Undergraduate Research Scholars Program and the MSU Extension Undergraduate Apprenticeship Program. The abstract book can be viewed at: <https://www.honors.msstate.edu/research/undergraduate-research-symposium>



Master's student Dishnu Sajeev and ADS Pre-Vet undergraduate Harper Cobb

**Project Title:** Reduction of Salmonella in Pork Trimmings, Abstract #023

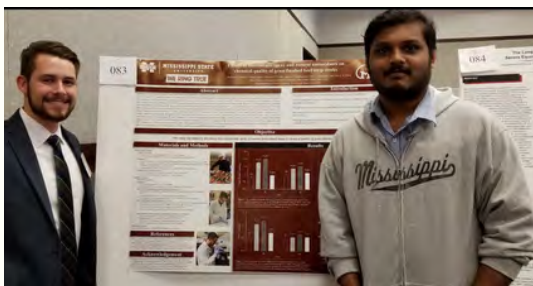
**Authors:** H. Cobb, D. Sajeev, H. T. Thames, S. Park, S. B. White, **J. M. N. Feugang, T.T.N. Dinh**



ADS Pre-Vet undergraduate Abigail Crouse received 2nd place in the biological sciences and engineering category.

**Project Title:** Effects of Exogenous Estradiol on Reproductive Characteristics of Cattle, Abstract #026

**Authors:** A. Crouse, L. Dysart, and **J. Larson**

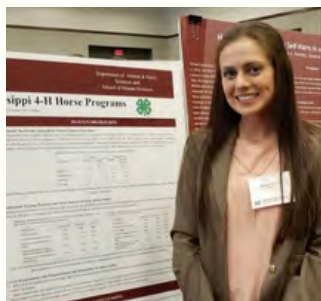


ADS Pre-Vet undergraduate Hudson Thames and master's student Dishnu Sajeev

**Project Title:** Effects of Electrostatic Spray and Natural Antioxidants on Chemical Quality of Grass-finished Beef Strip Steaks, Abstract #083

**Authors:** H. Thames, D. Sajeev, H. C. Cobb, A. T. Sukumaran, A. J. Holtcamp, and **T. T. N. Dinh**

## Spring 2019 Undergraduate Research Symposium



ADS Pre-Vet undergraduate student Shawna Downs

**Project Title:** Safety Awareness in Mississippi 4-H Horse Programs, Abstract #169

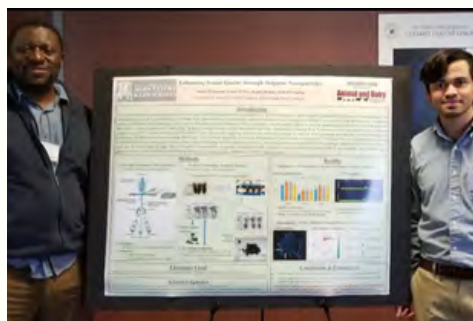
**Authors:** S. Downs, **C. Cavinder, PAS**, and M. Denny



**Lauren Ellison**, ADS undergraduate student

**Project Title:** Effect of Maternal Feed Restriction During Gestation on Adipogenic gene Expression in Fetal Perirenal Adipose Tissue, Abstract #031

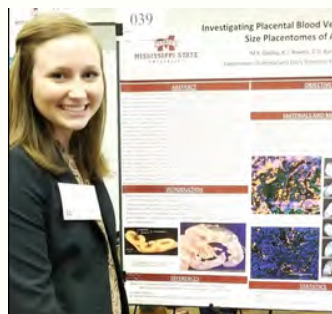
**Authors:** L. Ellison, D. S. Reid, and **D. D. Burnett**



Dr. Feugang and ADS undergraduate Daniel A. Fajardo

**Project Title:** Magnetic Sperm Selection for Quality Enhancement, Abstract #032

**Authors:** D. A. Fajardo, V. M. Paes, K. Bundy, and **J. M. Feugang**

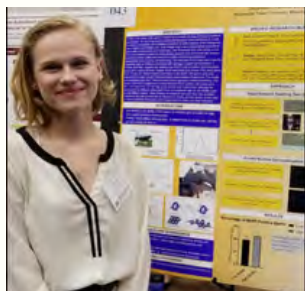


ADS Pre-Vet undergraduate Mary Godley

**Project Title:** Investigating Placental Blood Vessel Density in Various Size Placentomes of Angus Cattle, Abstract #039

**Authors:** M. Godley, K. J. Bowers, **D. D. Burnett**, and **C. O. Lemley**

## Spring 2019 Undergraduate Research Symposium



ADS Pre-Vet undergraduate Emily Haag

**Project Title:** Correlation of Bull Fertility Phenome with Sperm Cellular and Molecular Dynamics, Abstract #043

**Authors:** E. Haag, M. R. Ugur, M. Hitit, and **E. Memili**



Biochemistry Pre-Vet undergraduate Chelsey Hill

**Project Title:** Determining the Best Feeding Frequency for Pre-Weaned Dairy Calves, Abstract #044

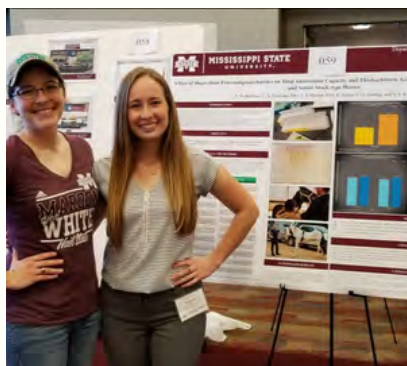
**Authors:** C. Hill, C. A. Becker, and **A. Stone**



Biochemistry undergraduate Bibek Timalsina

**Project Title:** Comparison of Rumen Fermentation Parameters Between the Holstein and Jersey Breeds, Abstract #085

**Authors:** B. Timalsina



PhD student Courtney Heaton and  
ADS Pre-Vet undergraduate Emili McClure

**Project Title:** Effect of Short-chain Fructoogliosacchardies on Total Antioxidant Capacity and Thiobarbituric Acid Reactive Substances in Mature and Senior Stock-type Horses, Abstract #059

**Authors:** E. McClure, **C. A Cavinder, PAS**, C. P. Heaton, PAS, D. Sajeev, **C. O. Lemley**, and **T. T. N. Dinh**





# Pancakes and Ponies

With Mississippi State University's  
Equestrian Team

**SATURDAY, 8-11  
MAY 11th am**

*Horse Unit at the Henry H.  
Leveck Experiment Station*

EARLY BIRD SPECIAL (before May 5th):

Children under 12: \$5.00

12 & Over: \$8.00

AFTER MAY 5th:

Children under 12: \$7.00

12 & Over: \$10.00

ENJOY AN ALL-YOU-CAN-EAT  
PANCAKE BREAKFAST  
WITH OUR AMAZING HORSES!

Pony Rides: \$15

Other activities include: Paint the Horse,  
a grooming station, & more

*All proceeds go towards the MSU Equestrian  
Team as they continue to compete in the  
upcoming season.*

To Register, e-mail Ashley Glenn at [aes779@msstate.edu](mailto:aes779@msstate.edu)



# SMALL RUMINANT PRODUCTION WORKSHOP

**SATURDAY, May 11, 2019 (7:30 AM—4:00 PM)**  
FORREST COUNTY EXTENTION — FORREST COUNTY MULTIPURPOSE CENTER  
952 SULLIVAN DR., HATTIESBURG, MS 39401



Demand for goat and sheep meat, milk, cheese, and hide has steadily increased in the United States during the last 10 years. These small ruminants have a high economic value because they are efficient converters of low-quality forages into quality meat, milk and other specialty markets. Dig deeper into goat and sheep production by increasing your knowledge in grazing management, animal production, nutrition, parasite ID, reproduction, and meat quality. Speakers include researchers and extension specialists from across the southeast.

#### Topics Include:

- ⇒ *Forage Selection and Grazing Management*
- ⇒ *Kidding/Lambing Management*
- ⇒ *Nutrition*
- ⇒ *Farm Assistance Programs for Small Ruminants*
- ⇒ *Meat Quality*
- ⇒ *Fecal Collection and Parasite Identification*
- ⇒ *Principles of Artificial Insemination (AI)*
- ⇒ *FAMACHA Training*

#### REGISTRATION INFORMATION:

Before APRIL 19—\$30/person

After APRIL 19—\$35/person

FAMACHA TRAINING KIT—\$10/farm (additional to registration cost)

**REGISTRATION WILL BE LIMITED TO THE FIRST 100 PARTICIPANTS AND WILL CLOSE MAY 3, 2019 at 5:00 PM CST.**

Registration will include: lunch, refreshments and workshop materials

**Register at <http://www.pss.msstate.edu/workshops/ruminant/>**

Organized by Dr. Rocky Lemus (Plant & Soil Sciences), Dr. Erdogan Memili (Animal & Dairy Sciences), and Mr. Kipp Brown (Animal & Dairy Sciences), MSU.

For more information contact Dr. Rocky Lemus at (662) 325-7718 or Ms. Kathy Johnson at (662) 325-2701.



#### Workshop Partners





**Small Ruminant Production Workshop Agenda**  
**SATURDAY, May 11, 2019 (7:30 AM—4:00 PM)**  
**FORREST COUNTY MULTIPURPOSE CENTER**  
**952 SULLIVAN DR., HATTIESBURG, MS 39401**

7:30 am – 8:15 am – **Registration**

8:15 am – 8:30 am – Welcome and Introductions

8:30 am – 9:20 am – Forage Selection and Grazing Management (Dr. Rocky Lemus, MSU)

9:20 am – 9:50 am – Breeding and Reproduction Practices for Small Ruminants (Dr. Erdogan Memili, MSU)

**9:50 am – 10:05 – Break**

10:05 am – 10:55 am – Kidding/Lambing Management: Breeding to Weaning/Market (Dr. Niki Whitley, Fort Valley State Univ.)

10:55 am – 11:45 am – Nutrient Requirement of Small Ruminants (Dr. Daniel Rivera, MSU)

11:45 am – 12:00 – NRCS Programs for Small Ruminants (Mr. Paul Caves)

**12:00 pm – 1:00 pm – Working Lunch**  
Meat Characteristics and Quality, (Dr. Derris Burnett and Mr. Tim Armstrong, MSU)

1:00 pm – 2:00 pm – Fecal Collection and Parasite Identification (Dr. Jim Miller, LSU, Retired)

2:00 pm – 3:00 pm – AI Demonstration (Mr. Brad Jones and Mr. Alex Shook, MSU)

3:00 pm – 4:00 pm – FAMACHA Training (Mr. Kipp Brown and Mr. Shelby Bearden, MSU)

**4:00 pm – 4:30 pm – Evaluation and Adjourn**





# MISSISSIPPI STATE

## Show Lamb Sale

May 18, 2019 at 11:00 at the MSU Beef Unit

**Strickland  
Show Lamb Genetics  
Proven Champions**



**A Great Source  
For Your  
Mississippi Bred Lambs**

**MSU will be Selling 10-20 Show Lamb Prospects  
Sired By Hostile, A Schminke Genetics Ram**



**Some MSPA  
Members May Also  
Consign Lambs**



**H. H. Leveck Research Station  
(South Farm)  
60 Beef Unit Road  
Mississippi State, MS 39762**



**ANIMAL & DAIRY SCIENCES**

**Corey White (662) 803-8815  
c.white@msstate.edu  
William White (662) 769-3500  
w.white@msstate.edu**



MISSISSIPPI STATE UNIVERSITY  
EXTENSION DAIRY

# 2019 DAIRY COW CAMP

Learn Judging and Showmanship

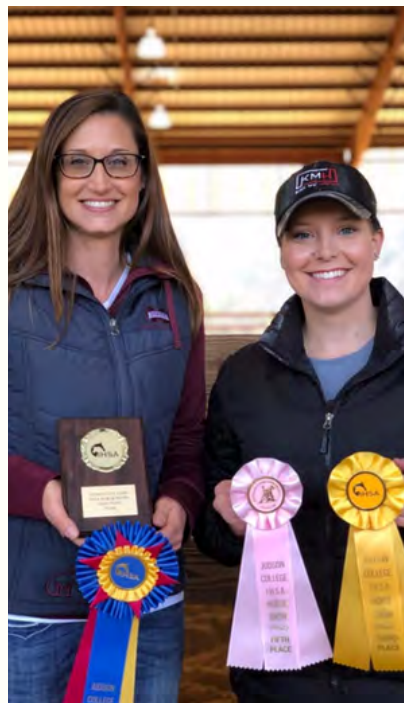
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**July 22 - 23, 2019**  
**Mississippi Horse Park**  
**Starkville, MS**

Contact: Dr. Amanda Stone  
Box 9815, Mississippi State, MS 39762  
(662) 325-8773



# 2018 - 2019 School Year Has Been One For The Books!!





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MISSISSIPPI STATE UNIVERSITY

*Congrats,  
Class of 2019!*

WE ARE ALL SO PROUD OF YOU!

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THE ANIMAL & DAIRY SCIENCES DEPARTMENT OF MISSISSIPPI  
STATE UNIVERSITY WOULD LIKE TO CONGRATULATE THE  
GRADUATING CLASS OF 2019. WE WISH YOU ALL THE BEST.

HAIL STATE!



# UPCOMING EXTENSION EVENTS

Beef Extension - Dr. Brandi Karisch

May 17: Beef 101, MSU Meat Science Laboratory, Mississippi State, MS

Phone: (662) 325-7465 Email: [brandi.karisch@msstate.edu](mailto:brandi.karisch@msstate.edu)

Beef Calendar: <http://extension.msstate.edu/livestock/beef/beef-calendar>

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Dairy Extension - Dr. Amanda Stone

July 22-23: 2019 Dairy Cow Camp, MSU Horse Park, Starkville, MS

Phone: (662) 325-8773 Email: [amanda.stone@msstate.edu](mailto:amanda.stone@msstate.edu)

Website: <http://extension.msstate.edu/dairy>

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4-H Events - Dr. Dean Jousan

May 25: State 4-H Livestock Judging Contest, MSU

Phone: (662) 325-2424

Email: [dj230@msstate.edu](mailto:dj230@msstate.edu) www

Website: <http://extension.msstate.edu/4-h>

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Equine Events - Dr. Clay Cavinder

Contact Dr. Cavinder for information about programs and events at (662) 325-7566 or

Email: [clay.cavinder@msstate.edu](mailto:clay.cavinder@msstate.edu)

Website: <http://extension.msstate.edu/agriculture/livestock/equine/upcomingprograms>



## 2019 Refereed Publications

- Carlisle, MS, Leif D., **Erdogan Memili, DVM, PhD**, Robert L. Linford, DVM, PhD, ACVS, Kristen A. Slater, DVM, **Molly C. Nicodemus, PhD**. Relationship between Gate Mechanics and the Speed of the Trot in the Weimaraner Dog Breed. *Topics in Companion Animal Medicine* 35 (2019) 26-30. <http://dx.doi.org/10.1053/j.tcam.2019.03.003>
- El Debaky, Hazem A., Naseer A. Kutchy, Asma Ul-Husna, Rhesti Indriastuti, Shamim Akhter, Bambang Purwantara, and **Erdogan Memili**. Review: Potential of water buffalo in world agriculture: Challenges and opportunities. *Applied Animal Science* 35:255–268. <https://doi.org/10.15232/aas.2018-01810>
- Ferjak, E.N., **C.A. Cavinder**, A.T. Sukumaran, **D.D. Burnett**, **C.O. Lemley**, **T.T.N. Dinh**. Fatty acid composition of mesenteric, cardiac, abdominal, intermuscular, and subcutaneous adipose tissues from horses of three body composition scores. *Livestock Science* 223 (2019) 116-123. <https://doi.org/10.1016/j.livsci.2019.02.01>
- Dutra, G. A., G. M. Ishak, O. Pechanova, T. Pechan, D. G. Peterson, J. C. F. Jacob, **S. T. Willard**, **P. L. Ryan**, E. L. Gastal, and **J. M. Feugang**. Seasonal variation in equine follicular fluid proteome. *Reproductive Biology and Endocrinology*. (2019) 17:29. <https://doi.org/10.1186/s12958-019-0473-z>
- Casey L. Durfey, Sabrina E. Swistek, **Shengfa F. Liao**, **Mark A. Crenshaw**, Henry J. Clemente, Rooban V. K. G. Thirumalai, Christy S. Steadman, **Peter L. Ryan**, **Scott T. Willard** and **Jean M. Feugang**. Nanotechnology-based approach for safer enrichment of semen with best spermatozoa. *Journal of Animal Science and Biotechnology*. (2019) 10:14. <https://doi.org/10.1186/s40104-018-0307-4>.
- Mayo, L. M., W. J. Silvia, D. L. Ray, B. W. Jones, **A. E. Stone**, I. C. Tsai, J. D. Clark, J. M. Bewley, and G. Heersche Jr. Automated estrous detection using multiple commercial precision dairy monitoring technologies in synchronized dairy cows. *Journal of Dairy Sciences*. 2019. J. Dairy Sci. 102:1–12. <https://doi.org/10.3168/jds.2018-14738>
- Yang, Zhongyue, Md. Shamimul Hasan, John K. Htoo, **Derris D. Burnett**, **Jean M. Feugang**, **Mark A. Crenshaw**, and **Shengfa F. Liao**. Effects of dietary supplementation of L-methionine vs. DL-methionine on performance, plasma concentrations of free amino acids and other metabolites, and myogenesis gene expression in young growing pigs. *Translational Animal Science*. *Transl. Anim. Sci.* 2019.3:113–123. doi: 10.1093/tas/txy109.
- Gastal, G.D.A., **J.M. Feugang**, F.L.N. Aguiar, G.M. Ishak, **C.A. Cavinder**, **S.T. Willard**, **P.L. Ryan**, E.L. Gastal. Effect of cryopreservation techniques on proliferation and apoptosis of cultured equine ovarian tissue. *Theriogenology*. <https://doi.org/10.1016/j.theriogenology.2018.11.034>.